

REMARKS

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Summary

By the foregoing, claims 1, 2, and 11 are newly cancelled, claim 4, 5, and 10 are amended. No new matter has been added.

Rejections under 35 U.S.C. §112

Claim 10 stand rejected under 35 U.S.C. §112, second paragraph as being indefinite. The claim has been amended to recite the subject matter clearer. Accordingly, the Examiner is respectfully requested to withdraw the rejection.

Rejection under 35 U.S.C. §103(a)

Claim 4 stands rejected under 35 U.S.C. §103(a) as being unpatentable over EP 0786325 to Toncelli in view of U.S. Patent No. 2,388,824 to Brown and DE 2309183 to Hedstrom. Claim 5 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Toncelli '325, Brown, Hedstrom and in further view of WO 2003/089189 to Toncelli. Claims 9 and 12-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Toncelli '325 in view of Brown. Claim 10 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Toncelli '325, Brown, and Hedstrom.

Thus, all claims stand rejected at least over Toncelli '325 in view of Brown. The rejections are respectfully traversed. None of the cited art teach, disclose, or suggest the presently claimed invention.

Both independent claims 9 and 12 recite a combination of steps of preheating and hardening a binder in an oven. Specifically, claim 9 recites

(d) using electromagnetic radiofrequency waves having a frequency of less than 300 MHz to dielectrically preheat the compacted sheet to a temperature where catalysis of the binder starts; and

(e) hardening the binder by heating in an oven in order to obtain the finished products.

Specifically, claim 12 recites:

(d) using electromagnetic radiofrequency waves having a frequency of less than 300 MHz in an intermediate station to dielectrically preheat the compacted sheet to a temperature where catalysis of the binder starts; and
(e) hardening in a final station the binder by heating in an oven in order to obtain the finished products.

With respect to claims 9 and 12, Toncelli '325 is cited for teaching all limitations, except step (e). Brown is cited to fill the gap. Toncelli '325 in combination with Brown fails to teach, disclose, or suggest the presently claimed invention for the reasons given below.

1. Brown teaches away from the presently claimed invention. Brown is cited at 1A:20-41 for the proposition that "*using a high electric field, resin before curing to ensure that the entirety of the mass is at a certain temperature so that the proper cure state can be achieved.*" OA at 47. Applicant respectfully disagrees.

At 1:20-41, Brown is merely concerned with disadvantages that are encountered when only a heated press alone is used in the curing of dielectric materials, especially thermosetting plastics or resins. "*... outer portions ... become heated to a greater extent than the inner portions of the materials ...*" 1a:20 et al.

Among these disadvantages, Brown describes one in particular: the material is preheated by means of a high frequency electric field. The heated work is then placed in a heated press where pressure is applied. 1A:38-41. Brown continues that "*[unless,] the press plates are maintained at the temperature of the work, there is an exchange of heat either from the work to the plates.*" 1A:41 et al.

Brown seeks to prevent such an exchange of heat. Brown teaches preheating the work material by a high frequency electric field. "*When the work material is either approaching or [is at] the curing temperature,*" the work material is subjected to a pressure by using a press. 1B:22-24. In

turn, the press has plates that are “*heated by a different form of energy*” so that it is heated to the same temperature to which the work has been already been heated to prevent heat losses from the material to be cured. “*Thus, the heated plates themselves act as a heat insulating members which prevent the heat in the work from flowing out [to] confining to the work the heat developed therein by the electric field.*” 1B:30 et al.

Indeed, the drawings and the various embodiments of Brown clarify that the gist of the invention is that of preventing heat losses from the preheated material whereby the heated press-plates act as insulating members which confine within the material the heat originally developed by dielectric heating.

In Brown, the action of the high frequency electrical field takes place during the step in which the work material undergoes a pressure by means of a press. Brown’s heating is tantamount to using electromagnetic radiofrequency waves between the steps (b) and (c). However, in the presently claimed invention, it is a subsequent step where the heating occurs, namely step (d).

In contrast, the presently claimed invention requires that the rough or “green” slab is preheated in an operation and location that are separate from the operation and location where hardening takes place. Specifically, the preheating of the slab is carried out before the slab is transferred to the oven.

In other words, rather than combining the operations as taught by Brown (in combination with Toncelli ‘325), these operations are separate operation performed in separate locations. The presently claimed invention performs operations from which Brown teaches away.

Thus, rather than filling the gap of Toncelli ‘325, Brown teaches away. One skilled in the art would not consult Brown in combination with Toncelli ‘325 to teach the presently claimed invention.

Accordingly, the Examiner is respectfully requested to withdraw the rejections for this reason alone.

2. One skilled in the art would not consult Brown to be combined with Toncelli '325. Applicant respectfully submits that one skilled in the art at the time the invention was made would not look to Brown to fill the gap in Toncelli '325.

The present invention is in the field of manufacturing sheet that utilize aggregates to make building materials. As the court in *In re Skoll, 523 F.2d 1392, (C.C.P.A. 1975)* determined that a person of ordinary skill in the art is presumed to be aware of the references directed to the same technological field as the claimed subject matter.

Similarly, the court in *Environmental Designs, Ltd. v. Union Oil Co., 713 F.2d 693, 696, 218 USPQ 865, 868 (Fed. Cir. 1983), cert. denied, 464 U.S. 1043 (1984)* found that "[f]actors that may be considered in determining level of ordinary skill in the art include . . . (5) sophistication of the technology; and (6) educational level of active workers in the field."

This point is well accepted by the U.S. Patent & Trademark Office. The MPEP at Section 2141.03 finds that "ascertaining level of ordinary skill is necessary to maintain objectivity." Even the now seminal *KSR International Co. v. Teleflex Inc., 550 U. S. _____ (2007)* does not alter this aspect. Therein, the court decided a person of ordinary skill in the art possesses the quality of "ordinary creativity."

In the situation at hand, the cited reference, Brown, is in the field of heating "*molding operation under heat and pressure.* ". 1A:17. Therein, Brown is directed to molding or shaping operation carried out on the material being cured.

In contrast, the presently claimed invention is directed to manufacturing a sheet consisting mainly of stone or stone like material and a binder that may be hardenable and is present in minute quantities. Such a slab is already pressed and, if a sheet can be so considered, molded well prior to the heating and the hardening of the binder. Thus, the technicians and mechanical engineers skilled in the art of manufacturing sheet that utilize aggregates would now need to become experts in modifying a molding apparatus.

Nothing in Brown, whether or not in combination with Toncelli '325 leads one skilled in the art of the presently claimed invention to use it to arrive at the presently claimed invention; or, for that matter, once used to arrive at the claimed invention.

Accordingly, the Examiner is respectfully requested to withdraw the rejections for this reason alone.

3. Brown in combination with Toncelli '325 does not teach, disclose, or suggest the claimed heating range. The presently claimed invention requires

using electromagnetic radiofrequency waves having a frequency of less than 300 MHz in an intermediate station to dielectrically preheat the compacted sheet to a temperature where catalysis of the binder starts

Brown in combination with Toncelli '325 is admitted to be silent with regards to the specific frequency utilized. However, Brown is supposed to be able to pick the correct frequency regardless. OA at 48. Applicant respectfully submits that the supposition is only conclusory and lacks a foundation in Brown or in Toncelli '325.

All six columns of Brown are devoid of even a single specific frequency. Brown at best states a high frequency field. 1B:20-21. At 2A:18 et al., Brown teaches that “[the] electric field should be of a frequency and intensity which are, respectively, determined by the nature and bulk of the material 1.” Brown goes on to suggest that the temperature be raised to the curing point.

However, the presently claimed invention requires that the frequency is chosen to pre-heat the sheet so that catalysis of the binder starts. This temperature is different from the curing or hardening temperature. The frequency is chosen to accommodate the binder, rather than the bulk material. It is the later hardening step that accomplishes the curing.

Accordingly, the Examiner is respectfully requested to withdraw the rejections for this reason alone.

4. None of the other art in combination with Toncelli '325 and Brown teach, disclose, or suggest the presently claimed invention. For example, Hedstrom teaches a gluing process for wood panels, in which the use of a heating step is suggested for removing the solvent from the gluing layer before the curing of the glue. Hedstrom fails to suggest a reason or method that is applicable to the presently claimed invention.

All dependent claims are allowable for at least the same reasons as the independent claim from which they depend.

In view of the remarks set forth above this application is in condition for examination ready passage to allowance which is respectfully requested. However, if for any reason the examiner should consider this application not to be in condition for examination or allowance, the examiner is respectfully requested to telephone the attorney at the number listed below prior to the issue of further action.

Any fee due with this paper, including any extension fees, may be charged to Deposit Account No. 50-1290.

Respectfully submitted,

/Hassan A. Shakir/
Hassan A. Shakir
Reg. No. 53,922
(212) 940.6489

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